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Yen

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(54) **STRUCTURE UNIVERSAL SERIAL BUS CONNECTOR**

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H01R 13/50 (2006.01)

(52) **U.S. Cl.**
CPC ***H01R 13/50*** (2013.01); ***H01R 27/00*** (2013.01)

(58) **Field of Classification Search**
CPC H01R 24/62; H01R 24/60; H01R 24/218; H01R 13/6658; H01R 13/502; H01R 13/6594; H01R 13/6581; H01R 13/46; H01R 13/659
USPC 439/668, 638, 660, 607.01, 676
See application file for complete search history.

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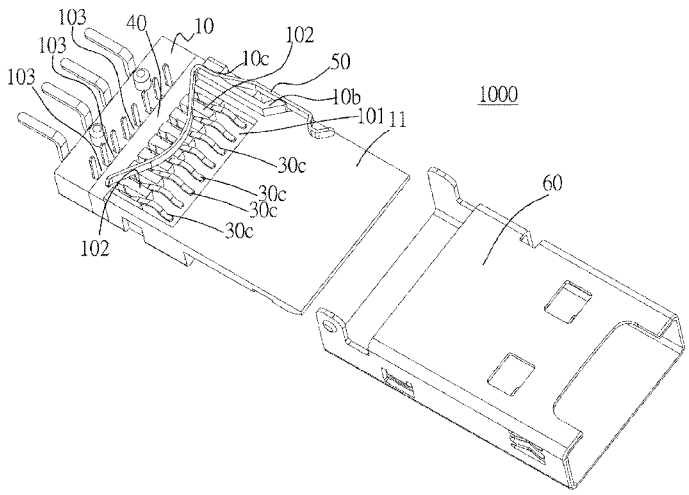
(57) **ABSTRACT**

This invention relates to an improved structure of USB connector, particularly relating to the structure of USB connector its bottom having a reading slot for memory card. An insulating base having a slice extending from the insulating base, the top of an insulating base and a slice is hollowly equipped with a number of terminal grooves which are arranged every other line for inlaying USB terminals. Mainly the bottom of an insulating base is equipped with grooves whose middle is protrudently equipped with a number of inlaying strips which are arranged every other line, and the rear of the grooves is protrudently equipped with bumps which are corresponding to the inlaying strips. The spaces between each inlaying strip and each bump are provided for inlaying the connecting terminals. In addition, both sides of an insulating base are equipped with inlaying grooves for inlaying a ⌐-shape hook which is provided for pressing each connecting terminal not to be loosened. Furthermore, one side of the bottom of an insulting base is protrudently equipped with a guiding slice and inlaying groove for inlaying a top locking spring. Also, a metal shell can fixedly be inserted to an insulating base forming aforementioned a USB connector having upper slot and rear reading slot of memory card.

1 Claim, 4 Drawing Sheets



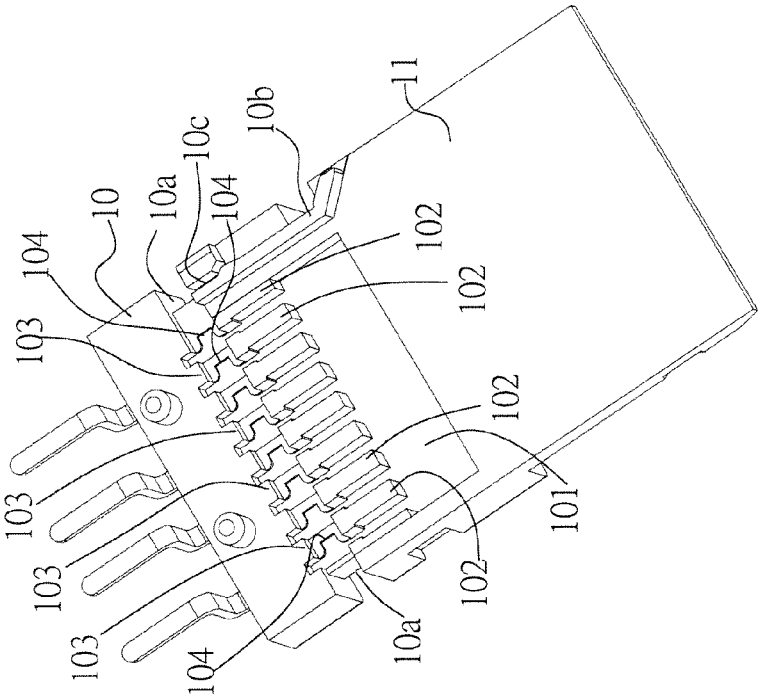


FIG.3

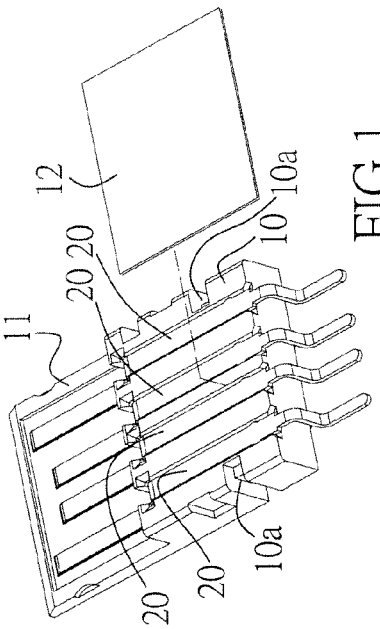


FIG.1

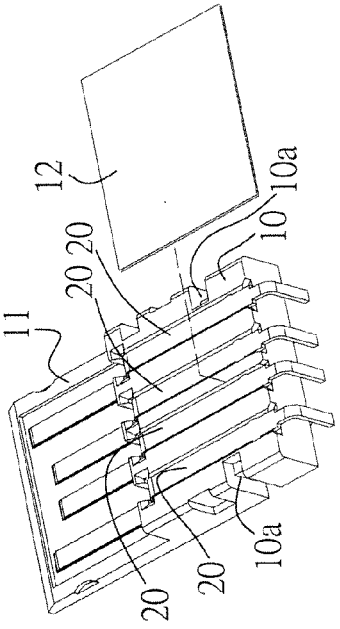
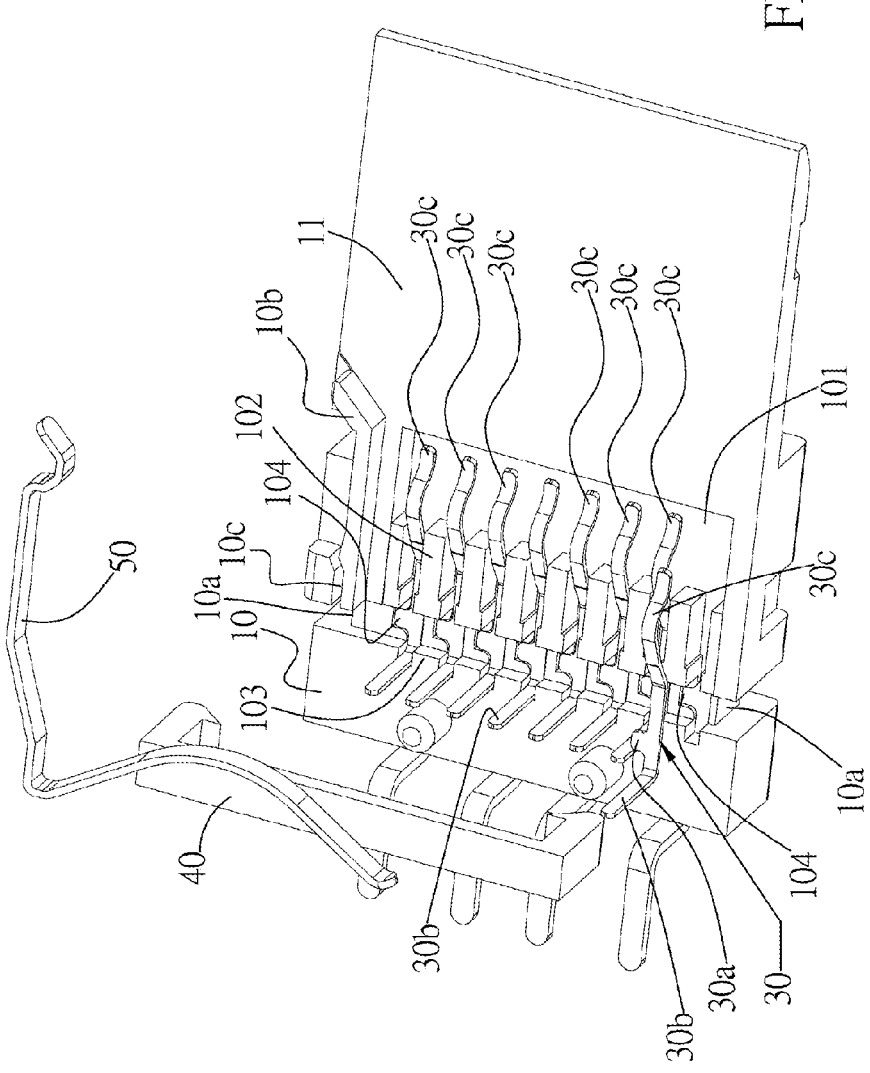


FIG.2

FIG.4


11
30c
30c
30c
30c
30c
30c
10b
102
104
10c
10a
10
103
50
40
101
30c
10a
104
30b
30a
30
30b

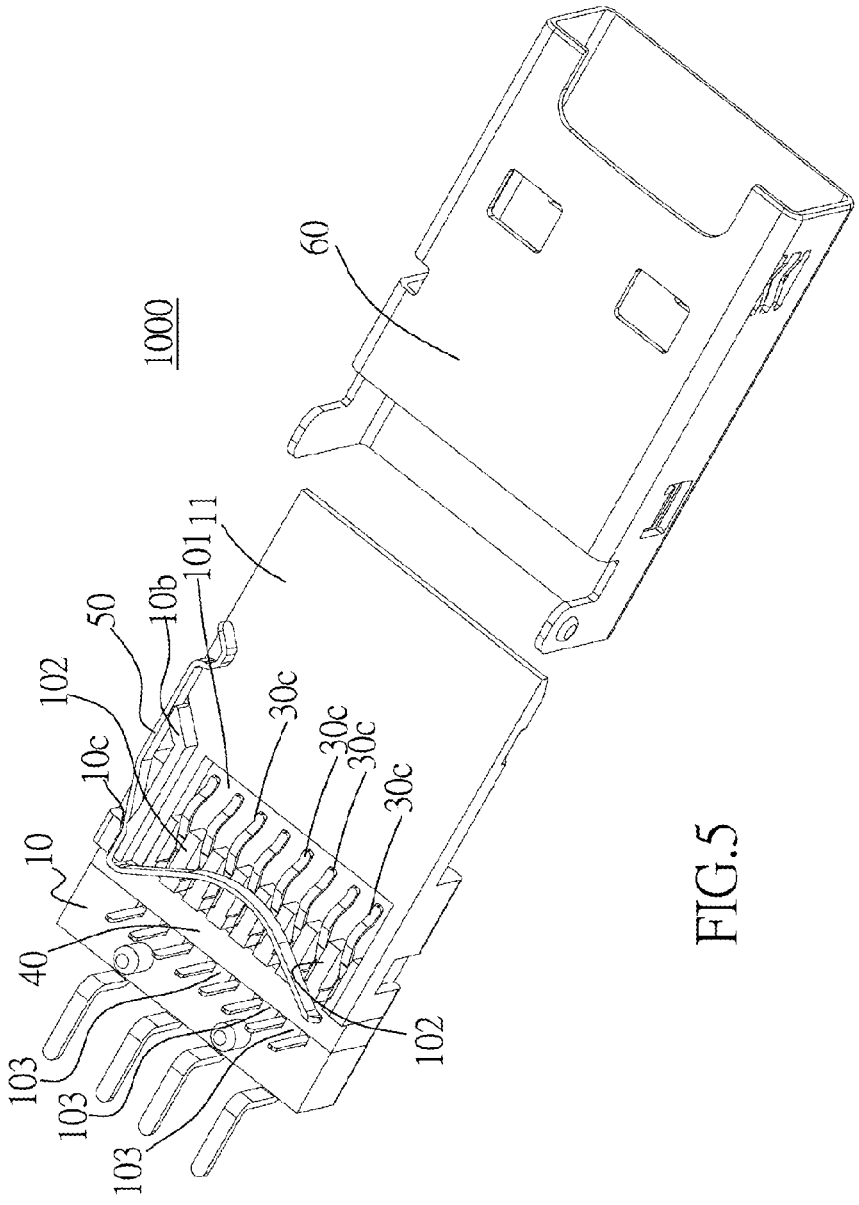

1000
60
11
101
10b
50
102
10c
30c
30c
30c
30c
10
40
103
103
103
102

FIG.5

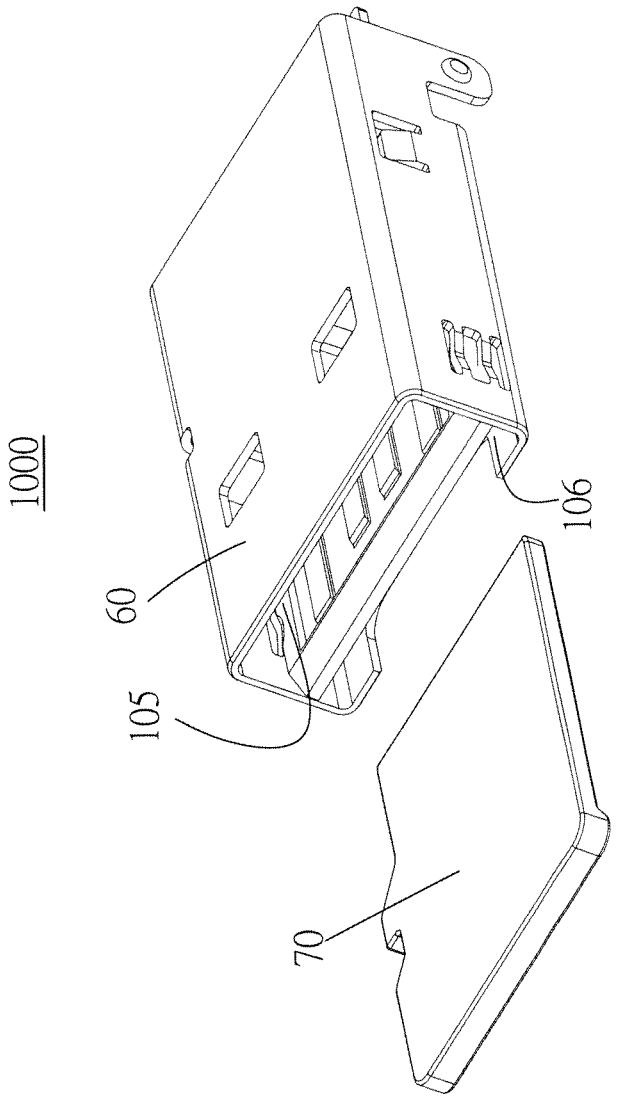


FIG.6

STRUCTURE UNIVERSAL SERIAL BUS CONNECTOR

BACKGROUND OF THE INVENTION

1. Technical Field

This invention herein relates to an improved structure universal serial bus (USB) connector, particularly relating to the technology field of USB connector.

2. Description of Prior Art

USB can provide with higher transmission rate, USB connector has become the mainstream connector because USB connector are now widely used as peripheral products such as mouse, keyboard, game handle, game controller, scanner, digital camera, copying machine, card reader, transferring line of hard disk, portable flash disk and network components.

A USB flash disk is provided for users in market because there are the requirements for saving various data and saving tool to be portable and small. However, the memory capacity of a USB flash disk is limited.

In view of this, aforementioned USB connector which has been widely applying to the various products relating to computers is limited by the memory space of memory capacity, furthermore, new memory card having high memory capacity its size is thin and small, therefore, in order to let the users easily take the reading and saving device to save data and extend memory spaces, the inventor has executed many researches and experiments to achieve an improved structure.

SUMMARY OF THE INVENTION

This invention relates to an improved structure universal serial bus (USB) connector, particularly relating to the structure of USB connector its bottom having a reading slot for memory card. An insulating base having a slice extending from the insulating base, the top of an insulating base and a slice is hollowly equipped with a number of terminal grooves which are arranged every other line for inlaying USB terminals. Mainly the bottom of an insulating base is equipped with grooves whose middle is protrudently equipped with a number of inlaying strips which are arranged every line, and the rear of the grooves is protrudently equipped with bumps which are corresponding to the inlaying strips. The spaces between each inlaying strip and each bump are provided for inlaying the connecting terminals. In addition, both sides of an insulating base are equipped with inlaying grooves for inlaying ⌐-shape hook which is provided for pressing each connecting terminal not to be loosened. Furthermore, one side of the bottom of an insulting base is equipped with a guiding slice and inlaying groove for inlaying a top locking spring. Also, a metal shell can fixedly be inserted to an insulating base forming aforementioned a USB connector having upper slot and rear reading slot of memory card.

The objective of this invention: this invention relates to provide with a USB connector having reading slot for inserting or replacing various memory cards which have different memory capacities forming the structure and functions of saving and reading and expending memory capacities. Said USB connector can be connected to various computer appliances for usual transferring and forming the saving and reading function. Said USB connector can be applied to USB transferring line providing with functions not only usual transferring function but also having the saving and reading the memory card, in addition, USB connector can be applied to USB flash disk unlimitedly extending memory capacities for reading and writing functions.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be apparent to those skilled in the art by reading the following detailed description of a preferred embodiment thereof, with reference to the attached drawings, in which:

FIG. **1** is a schematic view of USB connector illustrating an insulating base combined with the USB terminal;

FIG. **2** is a schematic view of one another preferred embodiment of the improved structure of USB connector illustrating an insulating base combined with the USB terminal;

FIG. **3** is a schematic view of the improved structure of USB connector illustrating the bottom of an insulating base;

FIG. **4** is a schematic view of the improved structure of USB connector illustrating the assembly of the USB connector according to one preferred embodiment;

FIG. **5** is a schematic view of the improved structure of USB connector illustrating the assembly of the USB connector according to one another preferred embodiment;

FIG. **6** is a schematic view of the improved structure of USB connector illustrating inserting the memory card;

DETAILED DESCRIPTION OF THE INVENTION

FIG. **1** is a schematic view of the improved structure of USB connector illustrating an insulating base combined with USB terminal (also referring to FIG. **2** and FIG. **3**); An insulating base **10** having a slice **11** extending from the front of an insulating base, the top of an insulating base **10** and a slice **11** is hollowly equipped with a number of terminal grooves which are arranged every other line for inlaying USB terminals **20**, and sticking an insulating film **12**; the welding rod of the terminal of the USB terminal **20** can be foldable or straight inserted (also referring to FIG. **2**).

FIG. **3** is a schematic view of the improved structure of USB connector illustrating the bottom of an insulating base; mainly the bottom of an insulating base **10** is equipped with grooves **101** whose middle is protrudently equipped with a number of inlaying strips **102** which are arranged every other line, and the rear of the grooves **101** is protrudently equipped with bumps **103** which are corresponding to the inlaying strips **102**, furthermore, an inlaying hole **104** is equipped between the inlaying strip **102** and the bump **103** (also referring to FIG. **1** and FIG. **2**), in addition, both sides of an insulating base **10** are equipped with inlaying grooves **10***a*, and one side of the bottom of an insulting base **10** is equipped with a guiding slice **10***b* whose terminal having a inlaying groove **10***c*.

FIG. **4** is a schematic view of the improved structure of USB connector illustrating the assembly of the USB connector according to one preferred embodiment (also referring to FIG. **5**); an insulating base **10** its spaces between each inlaying strip **102** and each bump **103** are provided for inlaying the connecting terminals **30**; furthermore, an inlaying hole **104** which is positioned between the inlaying strip **102** and the bump **103** is provided for positioning the protrudent slice **30***a* located on middle of the connecting terminal **30**. In addition, the inlaying grooves **10***a* of both sides of an insulating base **10** (also referring to FIG. **1** and FIG. **3**) is provided for inlaying a ⌐-shape hook **40** which is provided for pressing each connecting terminal **30** not to be loosened. Furthermore, one side of the bottom of an insulting base **10** is protrudently

equipped with a guiding slice **10***b* its inlaying groove **10***c* provided for inlaying a top locking spring **50**. Also, a metal shell **60** can fixedly be inserted to an insulating base **10** (also referring to FIG. **6**) forming a USB connector **1000** having upper slot **105** and rear reading slot **106** of memory card for inserting memory card **70**.

Referring to FIG. **4**, the middle of the connecting terminal **30** is equipped with a protrudent slice **30***a* its front end having a top connecting end **30***c*, and its end is folded to be welding rod **30***b*.

The structure of this invention can achieve the functions mentioned above and undisclosed in public conforming to utility and novelty so that the applicant applies for a patent and requests prompt examination for granting.

Many modifications and other embodiments of the inventions set forth herein will come to mind to one skilled in the art to which these inventions pertain having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is to be understood that the inventions are not to be limited to the specific examples of the embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims.

What is claimed is:

1. A universal serial bus (USB) connector comprising:

an insulating base having a tongue portion extending from a front end of the insulating base, a top end of the insulating base and the tongue portion is equipped with a number of terminal grooves for inlaying USB terminals, and attaching an insulating film over the USB terminals;

a bottom end of the insulating base being equipped with grooves whose middle is protrudently equipped with a plurality of inlaying strips, and a rear end of the grooves being protrudently equipped with projections corresponding to the inlaying strips;

an inlaying hole being equipped between the inlaying strips and corresponding projections;

opposing sides of the insulating base being equipped with inlaying grooves;

one side of the bottom surface of the insulating base being protrudently equipped with a guiding protrusion and an inlaying guiding groove positioned at an end of the guiding protrusion;

a substantially U-shaped hook;

a top locking spring;

a plurality of connecting terminals;

a middle of each of the connecting terminals being equipped with a protrudent tab, a front end of each of the connecting terminals having a resilient top surface connecting end, and a rear terminal end being folded to be a welding rod;

the bottom end of the insulating base having valleys between each of the inlaying strips and each of the projections provided for inlaying the connecting terminals;

the inlaying hole being positioned between the inlaying strip and the bump is projection and being provided for positioning the protrudent slice tab positioned at the middle of the connecting terminal;

the inlaying grooves of both sides of the insulating base being provided for inlaying the substantially U-shaped hook, provided for pressing each connecting terminal in order not to be loosened;

one side of the bottom surface of the insulting base being protrudently equipped with a second guiding protrusion, the inlaying guiding groove being provided for inlaying the top locking spring; and

a metal shell being fixedly inserted to the insulating base forming a connector having an upper slot and a rear slot for inserting a memory card.

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